

In re Application of
Gustafson *et al.*

Serial No.: 09/528,553

Filed: March 20, 2000

**For: CDMA Internet Protocol Mobile
Telecommunications Network Architecture
and Methodology**

Docket No: 4740-070/ P12760-US2

PATENT PENDING

Examiner: Mr. Soon D. Hyun

Group Art Unit: 2616

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June 12, 2006

Date _____

Season E. Munck

AFTER FINAL RESPONSE

Applicant submits the following response in reply to the Final Office Action mailed May 12, 2006. No fees or charges should be required for entry of this response. However, if any fees or charges are due for the entry of this response, the Commissioner is authorized to charge those fees to Deposit Account 18-1167.

AMENDMENTS TO THE CLAIMS

1-11. (Cancelled).

12. (Currently Amended) An apparatus for facilitating the step-wise migration of a telecommunication network containing a Mobile Services Switching Center (MSC) from a mixed circuit-switched and packet-switched network to an all packet switched network comprising:

an access control server connected to at least one base station, said at least one base station being in wireless communication with at least one mobile station, said at least one base station having a circuit-switched connection to said MSC,

said access control server including a signaling interface to manage packetized communications within said telecommunication network independent of said MSC, such that said MSC facilitates only circuit-switched communications within said telecommunication network;

a packet data service network (PDSN) and an authorization, authentication, and accounting unit (AAA) in communication with said access control server; and

a migratory interface to enable synchronization between said access control server and said MSC.

13. (Previously Presented) A method for providing packetized communications within a telecommunication network having a Mobile Services Switching Center (MSC), said method comprising the steps of:

transceiving a packetized communication between at least one mobile station and at least one base station;

managing, by an access control node within the telecommunication network, said packetized communication, said access control node having a signaling interface and being connected to said at least one base station to transceive said packetized communication bypassing said MSC.

14. (Previously Presented) The apparatus according to claim 12, wherein said at least one mobile station comprises a mixture of legacy mobile stations and all-packetized mobile stations.

15. (Previously Presented) The apparatus according to claim 12, further comprising:
a Packet Authentication Center (PAC) in communication with said access control server.

16. (Previously Presented) The apparatus according to claim 15, wherein said PAC contains subscriber profiles for authentication and authorization of packet data.

17. (Previously Presented) The apparatus according to claim 12, wherein said network further comprises:

a home location register (HLR) in communication with said MSC.

18. (Previously Presented) The apparatus according to claim 12, wherein said network further comprises:

a packet data service network (PDSN) in communication with said base station.

19. (Previously Presented) The apparatus according to claim 18, wherein said network further comprises:

a home agent unit (HA) and an authorization, authentication, and account unit (AAA) in communication with said PDSN.

20-21. (Cancelled).

22. (Currently Amended) The apparatus according to claim ~~20~~ 12, wherein said PDSN is in communication with said base station via a packet control function.

23. (Previously Presented) The apparatus according to claim 12, wherein said access control server maintains and updates a subscriber packet service subscription profile and actual packet session characteristics.

24. (Previously Presented) The apparatus according to claim 12, wherein said access control server is responsible for bearer control and mobility management associated with packet services.

25. (Previously Presented) The apparatus according to claim 12, wherein said MSC center maintains control and handling procedures for said circuit-switched communications.

26. (Previously Presented) The apparatus according to claim 12, wherein said network comprises a code division multiple access wireless telecommunications network.

27-30. (Cancelled).

31. (Currently Amended) A wireless communication system, comprising:

a packet data carrier comprising a plurality of bearers associated with a plurality of packet data services;

a plurality of mobile devices configured to communicate packet data over the packet data carrier, and to use the plurality of bearers to access the plurality of packet data services;

a base station configured to communicate with the respective mobile devices over the packet data carrier; and

a packet data service access monitor, the packet data service access monitor comprising a packet authentication center (PAC) configured to maintain[[]] a packet service profile for each of the plurality of mobile devices, and

an access control server (ACS) including a signaling interface and communicatively coupled with the PAC and the base station, the ACS configured to manage packet data services for the plurality of mobile device based, at least in part, on their respective packet service profiles.

32. (Currently Amended) The wireless communication system of claim 31, wherein the ACS and the base station communicate over an Internet protocol (IP)[[=]] based communication link.

33. (Previously Presented) The wireless communication system of claim 31, wherein the packet data includes packetized voice data.

34. (Previously Presented) The wireless communication system of claim 31, wherein the ACS is configured to track and maintain a session profile for each packet data communication involving a respective mobile device.

35. (Cancelled).

36. (Currently Amended) The wireless communication system of claim ~~35~~ 31, wherein the mobile devices are configured to switch from a first packet data service associated with a first bearer to a second packet data service associate with a second bearer, and wherein the ACS is configured to manage handoffs of the respective mobile devices from the first bearer to the second bearer.

37. (Previously Presented) A communication system employing packetized communications for voice and data transmissions, the communication system comprising:

a code division multiple access wireless communication network having a mobile station and
a base transceiver station configured to support wireless packetized communications
therebetween;

an access control server in communication with the base transceiver station and including a
signaling interface to manage the wireless packetized communications;

a mobile services switching center in communication with the base transceiver station, the
mobile services switching center servicing circuit-switched communications with the
mobile station within the code division multiple access communication network; and
a migratory interface to enable synchronization between the access control server and the
mobile services switching center.

38. (Cancelled).

39. (Currently Amended) The communication system of claim ~~38~~ 37, wherein the circuit-switched communications with the mobile services switching center comprise voice only communications.

40. (Currently Amended) The communication system of claim ~~38~~ 37, further comprising a home location register (HLR) in communication with the mobile services switching center.

41. (Cancelled).

42. (Previously Presented) The communication system of claim 37, wherein the packet service means within the access control server services packet-switched data only communications with the mobile station within the code division multiple access communication network.

43. (Previously Presented) The communication system of claim 37, wherein the access control server is an Internet Protocol (IP) entity comprising means therein for setting up and maintaining at least one packet data session.

44. (Previously Presented) The communication system of claim 37, further comprising a Packet Authentication Center (PAC) in communication with the access control server.

45. (Previously Presented) The communication system of claim 37, wherein the PAC contains subscriber profiles for authentication and authorization of packet data.

46. (Previously Presented) The communication system of claim 37 further comprising a packet data service network (PDSN) in communication with the base transceiver station.

47. (Previously Presented) The communication system of claim 46, further comprising a home agent unit (HA) and an authorization, authentication, and account unit (AAA) in communication with the PDSN.

48. (Previously Presented) The communication system of claim 46, wherein the PDSN is in communication with the base transceiver station via a packet control function.

49. (Previously Presented) The telecommunication system of claim 37, further comprising a packet data service network (PDSN) and an authorization, authentication, and accounting unit (AAA) in communication with the access control server.

50. (Previously Presented) The communication system of claim 37, wherein the access control server maintains and updates a subscriber packet service subscription profile and actual packet session characteristics.

51. (Previously Presented) The communication system of claim 37, wherein the access control server is responsible for bearer control and mobility management associated with packet services.

52. (Previously Presented) A method of mobile communication employing a mobile device, the mobile device configured for circuit switched communication and packet data communication in a wireless communication system comprising a circuit switched network and a packet data network, the method comprising:

- generating a registration request at the mobile device, the registration request comprising circuit switched specific parameters and packet data specific parameters;
- generating a registration message based on the circuit switched specific parameters in the registration request;
- transmitting the registration message to the circuit switched network;
- authenticating the mobile device in the circuit switched network based on the registration message;
- generating an authentication message from the packet data specific parameters in the registration request;
- transmitting the authentication message to the packet data network; and
- authenticating the mobile device in the packet data network based on the authentication message.

53. (Previously Presented) The method of claim 52, further comprising

- the mobile device sending a packet data session request to the packet data network;
- the packet data network authorizing the packet data session request based on a packet service profile associated with the mobile device;
- the mobile device accessing a traffic channel in the packet data network; and
- the mobile device opening an R-P connection over the traffic channel for the packet data session.

54. (Previously Presented) The method of claim 53, further comprising storing information related to the packet data session request and storing a quality of service profile for the packet data session.

55. (Previously Presented) The method of claim 53, further comprising notifying the circuit switched network that a packet data session is active for the mobile device in the packet data network.35.

56. (Previously Presented) The method of claim 53, further comprising:

receiving an incoming circuit switched communication through the circuit switched network;
the circuit switched network requesting that the mobile device accept the circuit switched communication; and
the mobile device, accessing a traffic channel in the circuit switched network in order to accept the circuit switched communication.

57. (Previously Presented) The method of claim 56 further comprising notifying the packet data network that the mobile device is engaged in a circuit switched communication in the circuit switched network.

58-60 (Cancelled).

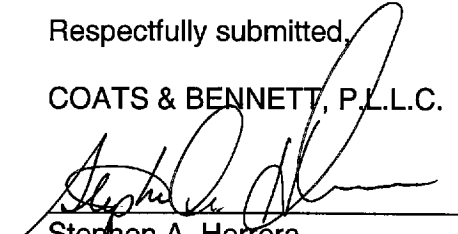
REMARKS

In the Office Action, the Examiner allowed claims 52-57. The Examiner also rejected independent claims 12 and 31 under §102(e) as being anticipated by Wang, and independent claim 37 under §103(a) as being obvious over Chang. However, the Examiner indicated that dependent claims 21, 35, 36, and 41 contained allowable subject matter. Therefore, Applicant has amended claim 12 to incorporate the subject matter of allowed dependent claims 20 and 21. Applicant has also amended claim 31 to incorporate the subject matter of allowed dependent claim 35, and amended claim 37 to incorporate allowed dependent claims 38 and 41. The dependencies of claims 22, 36, and 39-40 have been amended accordingly. Additionally, Applicant has amended claims 31-32 to correct minor typographical errors not noted by the Examiner. Finally, Applicant has cancelled claims 27-30 and 58-60 thereby rendering the rejections to those claims moot.

In light of the amendments, all pending claims should now be in condition for allowance. Therefore, Applicant respectfully requests that the Examiner allow all pending claims.

Respectfully submitted,

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